Partition management in Linux

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Partition management on Kali Linux

Partition management on Kali Linux, a popular distribution for security testing, involves creating, modifying, and deleting disk partitions to organize data efficiently and possibly for multi-boot configurations with other operating systems.

Let us cover some examples of partition management on Kali Linux, utilizing command-line tools that are commonly available in most Linux distributions.

Listing Current Partitions

Before making any changes, it's essential to view the current partition layout. The ***lsblk*** and fdisk commands are useful for this:

```
lsblk
```

or

```
sudo fdisk -l
```

These commands will list all block devices (like HDDs, SSDs, USBs) and their partitions.

Creating a New Partition

To create a new partition, you can use ***fdisk*** or ***parted***. Here's an example using fdisk for a device named ***/dev/sda***:

1. Open fdisk on the target device:

```
sudo fdisk /dev/sda
```

2. Use the n command within fdisk to create a new partition, follow the prompts to specify the partition type, and allocate space.
3. Use the w command to write the changes to the disk.

Formatting a Partition

After creating a partition, you need to format it with a filesystem. For example, to format a new partition ***/dev/sda1*** with the **ext4** filesystem, use:

```
sudo mkfs.ext4 /dev/sda1
```

Mounting a Partition

To access the files on the newly formatted partition, mount it to a directory:

```
sudo mount /dev/sda1 /mnt/mynewpartition
```

Resizing a Partition

Resizing a partition often involves using a tool like ***gparted*** (a graphical tool) or ***resize2fs*** for ext4 partitions. First, you might need to resize the partition boundary with ***fdisk*** or ***parted***, then resize the filesystem:

1. Resize partition (example with parted):

```
sudo parted /dev/sda resizepart 1 100%
```

This command resizes /dev/sda1 to take up all available space.

2. Resize filesystem:

```
sudo resize2fs /dev/sda1
```

Deleting a Partition

To delete a partition with ***fdisk***:

1. Open fdisk on the target device:

```
sudo fdisk /dev/sda
```

2. Use the ***d*** command to delete a partition and follow the prompts.
3. Use the ***w*** command to write the changes to the disk.

Creating a Swap Partition

Swap space can be crucial for system performance, acting as virtual memory:

1. Create a partition using ***fdisk*** or ***parted*** as shown above.
2. Format the partition as swap:

```
sudo mkswap /dev/sda2
```

3. Enable the swap:

```
sudo swapon /dev/sda2
```